3D Guidance trakSTAR™

Class 1, Type B Applied Part

Desktop electronics unit tracks multiple sensors simultaneously

Track Objects with Magnetic DC Technology

- **Fast, dynamic tracking** – 240 to 420 updates per second.
- **Miniaturized passive sensors** – outputs unaffected by "power-line" noise sources.
- **All attitude tracking** – no inertial drift or optical interference.
- **High metal immunity** – no distortion from non magnetic metals.

Interchangeable sensor sizes for full six degrees–of–freedom tracking

Magnetic field transmitter options for mid and short-range tracking

Ascension Technology Corporation
an NDI company

FAST PORTABLE AFFORDABLE

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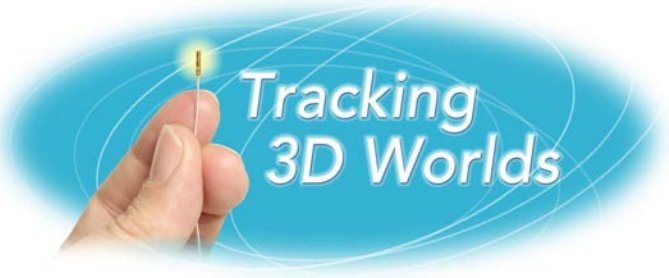
Technical

Sensor Configurations	Model 55 (0.56 mm), Model 90 (0.9 mm), Model 130 (1.5 mm), Model 180 (2.0 mm), Model 800 (8.0 mm)
Degrees of Freedom	6 (Position and Orientation)
Update Rate	Up to 420 updates/second for each sensor (Default: 240 updates/second)
Translation Range	**MODEL 55 SENSOR** • Mid-Range Transmitter: 25 cm (10.0 inches) • Short-Range Transmitter: Contact Ascension **MODEL 90 SENSOR** • Mid-Range Transmitter: 36 cm (14.0 inches) • Short-Range Transmitter: Contact Ascension **MODEL 130 SENSOR** • Mid-Range Transmitter: 46 cm (18.0 inches) • Short-Range Transmitter: Contact Ascension **MODEL 180 SENSOR** • Mid-Range Transmitter: 58 cm (23.0 inches) • Short-Range Transmitter: Contact Ascension **MODEL 800 SENSOR** • Mid-Range Transmitter: 78 cm (31.0 inches) • Short-Range Transmitter: 46 cm (18.0 inches)
Angular Range	All Attitude: ± 180° Azimuth & Roll, ± 90° Elevation
Static Accuracy*	Position: 1.4 mm (0.055 inch) RMS Orientation: 0.5° RMS *Higher accuracies achievable in smaller tracking volumes.
Static Resolution	Position: 0.5 mm (0.02 inch) at 30.5 cm (12.0 inches) Orientation: 0.1° at 30.5 cm (12.0 inches) *Resolution measured for tracker with mid-range transmitter and 8 mm sensor.
Outputs	X, Y, Z positional coordinates, orientation angles, orientation matrix or quaternions
Interface	USB 2.0 and RS-232
Data Format	Binary data records
Communication	Windows API and Drivers

Physical

Electronics Unit	29.0 cm (11.4 inches) x 18.4 cm (7.2 inches) x 5.7 cm (2.2 inches) metal box
Transmitters	• Mid-Range: 9.6 cm (3.8 inches) cube with 3.3 m (10.9 ft) cable • Short-Range: 6.4 cm (2.5 inches) x 4.6 cm (1.8 inches) x 5.2 cm (2.1 inches) with 3.3 m (10.9 ft.) cable
Passive Sensors	**MODEL 55**: 0.56 mm (0.02 inch) x 80 mm (3.2 inches) to 210 mm (8.27 inches) for biopsy needle configurations only, with 2.3 m (7.5 ft.) cable **MODEL 90**: 0.9 mm (0.04 inch) x 7.25 mm (0.29 inch) with 3.3 m (10.9 ft.) cable **MODEL 130**: 1.5 mm (0.05 inch) x 7.7 mm (0.30 inch) with 3.3 m (10.9 ft.) cable **MODEL 180**: 2.0 mm (0.07 inch) x 9.9 mm (0.38 inch) with 3.3 m (10.9 ft.) cable **MODEL 800**: 8.0 mm (.31 inch) x 20.0 mm (0.78 inch) with 3.3 m (10.9 ft.) cable **Model 55, 90, 130 & 180 only**: • Ascension Medi-Mag Cable, USP class 6 jacket material. • USP class 6 sensor housing. Assembly and cable materials are EtO and cold sterilant tolerant. Warning: Semiconductor devices in sensor connector are not gamma shielded and may be damaged or erased if exposed to gamma radiation and/or autoclaving. Sensors and cable assemblies are fragile components and must be sheathed, isolated and safeguarded prior to use in patients.
Power	The unit's internal supplies will operate from 100 to 240V, at 50/60 Hz. Power consumption is 50 VA.
Operating Temperature Environment	5°C to 40°C; 90% non-condensing humidity Ferromagnetic objects and stray magnetic fields in the operation volume may degrade performance. Contact us for assistance in minimizing metallic distortion and noise interference.

FEATURE	BENEFITS
Metal tolerant	Outputs unaffected by composite materials. Capable of driving errors induced by highly conductive metals (such as aluminum) to zero by adjusting measurement rate.
Advanced new magnetic technology and signal processing	• Improved dynamic performance over longer ranges. • "Power-line" noise filtered out.
Occlusion and drift free	Clear line-of-sight between transmitter and sensor(s) is not required.
Body mountable transmitter	New lightweight coil set can be externally mounted on head or body.
Onboard diagnostics	Self-diagnostics and run-time monitoring for improved tracker reliability and safety.
Software support	USB tracker control API for XP/Pro, XP, Vista, Window 7, 32 & 64 bit, Sample programs.



Regulatory Certifications

- Class I Device with Type B Applied Part (Sensors), EN60601-1 Compliant.
- RoHS and WEEE compliant.
- Medical users must comply with all pertinent FDA/CE/IRB certifications prior to using this device in human patients.

Note on Accuracy

Accuracy is defined as the root mean square (RMS) deviation of a true measurement of the magnetic center of a single sensor with respect to the magnetic center of a single transmitter measured over the specified translation range. Accuracy varies from one location to another over this range and will be degraded if there are interfering electromagnetic noise sources or metal in the operating environment, which have not been identified and minimized.

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